

Survey of the Nation's Lakes

Presentation at NALMS'
25th Annual International Symposium
Nov. 10, 2005



Today's Discussion

- Overview of EPA's monitoring initiative
- Review key elements of the Lakes Survey
- Presentation on New England lakes survey
- Describe technical issues on defining the target population of lakes and network design
- Present proposed approach
- Discussion/Feedback

Recent Critiques* of Water Monitoring Programs

- States and Tribes do not have all data needed to make decisions
 - Set water quality standards
 - Develop watershed plans and TMDLs
 - Evaluate effectiveness of programs
- Data inadequate for scientifically-valid characterization of water quality condition regionally or across U.S.

*GAO, National Academy of Science, National Academy of Public Administration, and other recent reports

Vision for Future

- EPA, States, and Tribes have adequate monitoring data to make sound watershed management decisions
- EPA, States and Tribes can characterize the health of the nation's waters

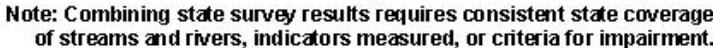
Actions for Achieving the Vision

- Strengthen State, Tribal & Interstate monitoring programs
- Collaborate to produce statistically-valid assessments of the nation's waters
- Expand accessibility and use of data
- Promote partnerships

Integrate Multiple Monitoring Tools

- Predictive tools
- Probability-based (randomized) designs
- Innovative approaches – remote sensing
- Targeted monitoring designs

...to support full range of decision objectives
for all water body types at multiple scales.



EPA Monitoring Initiatives

FY05 and FY06

- Enhance state monitoring programs by providing new funds to states to develop and implement monitoring strategies
 - Enhance access to and use of data
 - Integrate tools to support more efficient use of monitoring resources
- Assess the condition of all of the Nation's waters and changes over time
 - Create partnership among federal, state and others to cost-effectively survey the Nation's waters
 - Provide information, with documented confidence, on the extent of water quality problems and key stressors across the country to support decision making

Allocation of Monitoring Initiative

- Provide \$9.9M increase for improved monitoring programs and state priorities
 - Provide each state \$172,000 annually as base 106 allocation to be directed to priorities outlined in state monitoring strategies
 - Continue to provide tribal and interstate set-aside
- Provide states and tribes \$8.5M additional resources to support statistically-valid surveys of the Nation's waters
 - \$8000 per site for regional/national scale survey in lower 48
 - \$500K set aside to build survey capacity in AK, HI, trust territories

Proposed Approach to Support Survey Work

- Establish a survey fund to be disbursed annually to ensure states have sufficient resources to participate in national/regional surveys
 - First allocation will be released Spring 2006 to support lakes survey preparation in 2006 and field work in 2007
 - Allocate funds based on the sample draw with each state receiving \$8000 per site that falls in their jurisdiction
 - States may take the money directly or request in-kind contractor services to implement field and lab work
- EPA will allocate separate funds to support survey design, implementation and research needs
- EPA/State workgroup on probability surveys to provide guidance on collaboration and implementation

Proposed Schedule for Surveys

Annual Output Measure for Monitoring - EPA, with states and other partners will assess and identify trends for 100% of the Nation's waters by 2017 using statistically-valid surveys to evaluate the extent that waters support the fishable and swimmable goals of the Clean Water Act. Annual milestones to meet this goal are:

Coastal waters and estuaries
Streams and small rivers
Lakes, ponds, reservoirs
Large and great rivers
Wetlands

Amount Assessed in 2000	Target for 100% Assessed	Target for Trends of 100%
100%	2004	2007
19%	2006	2011
43%	2009	2014
19%	2011	2016
8%	2013	2018

 Red-Planning
  Yellow-Progress
  Green-Success

Purpose of Lakes Survey

- Report on the condition of the Nation's lakes
 - Statistically-valid design so dataset represents the condition of all lakes in regions that share similar ecological characteristics
 - Provide regional and national estimates of the condition of lakes, with option for state-scale estimates
 - Use consistent sampling and analysis procedures to ensure the results can be compared across the country
- Help build state and tribal capacity for monitoring and assessment
- Promote collaboration across jurisdictional boundaries in the assessment of water quality

Schedule for Lakes Survey

- **Today/Tomorrow** – Opportunity for continued discussion/input on design of Lakes Survey
- **Winter 2006** – Will finalize approach to selecting target lakes for the Lakes Survey; will serve as the basis to allocate section 106 funds
- **April 26-28, 2006 State Lakes Meeting** in Chicago will focus on the indicators, field protocols and implementation issues
- **Summer/Fall 2006** – Develop sampling protocols, lab protocols and QA/QC plans
- **Spring 2007** – Training for field crews
- **Summer 2007** - Sampling conducted
- **2007/2008** – Sample processing and data analysis
- **2009** – Report on the Condition of the Nation's Lakes completed

Planning Activities

- Explore key technical issues
 - Research grants
 - Review past and current efforts
- Planning meetings with states and other partners to help define technical elements of the survey
- Funding for field and lab work for national/regional scale reporting
- Collaboration in data analysis, interpretation and reporting

Research Grants

- Reference condition
- Classification
- Remote sensing
- Biological indicators and field sampling protocols

Build from Past Efforts

- National Eutrophication Study
- Acid Rain Study
- National Fish Tissue Study
 - <http://epa.gov/waterscience/fishstudy/>

Build from Current Efforts

- State programs
 - Florida
 - Indiana
 - Maine
 - Minnesota
 - New Jersey
 - New York
 - Vermont
 - Others...
- Regional collaborations
 - Region 1
 - Region 7
 - Others...

Elements of Lakes Survey

- Monitoring objectives
- Network design
- Core indicators
- Field methods and lab protocols
- QA/QC
- Field implementation and data collection
- Data management
- Data analysis and reporting
- Evaluation and feedback

Monitoring Objectives

- Establish a baseline for the condition of the Nation's lakes that addresses 2 key questions
 - What percent of the Nation's lakes are in good condition for key indicators of ecological health and human activities?
 - What is the relative importance of key stressors such as nutrients and pathogens?

Network Design Activities

- Probability sites
 - Defining the target population of lakes for inclusion in the survey
 - Identifying specific types of lakes the survey be designed to describe
- Reference sites
 - Developing abiotic screening factors
 - Targeting reference sites

Core Indicators

- Address goals of the CWA
 - Physical, chemical, biological integrity
 - Water quality that supports:
 - Healthy biological communities
 - Recreational activities
 - Fish consumption
 - Drinking water
- Provide insights on leading stressors affecting water quality

Collaboration is Key

- Designing and implementing survey
- Supporting state monitoring capacity
- Supporting other water quality programs
- Building and strengthening partnerships

For more info...

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- Visit EPA's Clean Lakes Web site:
<http://www.epa.gov/owow/lakes/>

